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# BREAST SURGERY

## SHORT REPORT

### Breast reconstruction at The Aga Khan University — A 10 year audit

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#### Abstract

Considering the high incidence of breast cancer and the subsequent need for a mastectomy, the number of patients having breast reconstruction remains relatively low the world over. Most studies from the west show that anywhere between 5% to around 50% of women proceed to reconstruction following a complete mastectomy. There is a great paucity of literature on the subject in Pakistan. Anecdotal and unofficial accounts would suggest that less than a fraction of 1% of women in Pakistan undergo reconstruction following a mastectomy.

We reviewed our cases retrospectively over a 10 year study period from January 2005 to December 2014 with the objective to assess our results and to learn from them as well as to attempt to raise the profile of this important reconstructive manoeuvre.

Our numbers are low when compared internationally. However on a national level it would seem that the numbers currently exceed most institutions in the country. The overall results appear to be acceptable though the low numbers preclude definitive conclusions.

**Keywords:** Breast reconstruction, Breast implant, Expander, Mastectomy, Capsular contracture.

#### Introduction

The American Cancer Society estimates that nearly 230,000 American women are diagnosed annually with invasive breast cancer. Many women will undergo a mastectomy and therefore have the option of breast reconstruction.<sup>1</sup>

The frequency of breast reconstruction varies the world over. It is generally low compared to the number of mastectomies. Unfortunately there is a paucity of literature on the subject in Pakistan but anecdotal and unofficial evidence suggests a reconstruction rate of less than 1%.

In stark contrast the reconstruction rate in the west is significantly higher ranging from 7.9% to 46% as quoted

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by Héquet et al.<sup>2</sup> Another study by Claudia et al quoted an immediate reconstruction rate of 37.8% in the United States in 2008.<sup>3</sup>

Current reconstructive techniques provide numerous options for postmastectomy reconstruction. Autogenous tissue reconstruction is generally thought to produce the most natural looking and feeling breast. In addition the permanency of the results and lack of dependence on a manmade prosthesis is also advantageous. However the magnitude of these procedures is significant. Many women instead opt for a prosthetic reconstruction, choosing a less invasive operative procedure with a faster recovery. Ultimately, individualized selection of a reconstructive technique for each patient will be a predominant factor in achieving reconstructive success.<sup>4-6</sup>

Breast reconstruction was started at our institution in 1994. Since then there has been a slow but gradual increase in reconstruction with a slight upward tick in recent years.

The object of this audit of our experience here at AKU is to assess our results and to learn from them as well as to attempt to raise the profile of this important reconstructive manoeuvre.

#### Material and Methods

A retrospective review of all patients who underwent breast reconstruction from January 2005 to December 2014 was carried out. Patient's records were reviewed from the institution's own database. Data was collected according to standard performa containing patient's demographics, operative data, morbidity data and follow-up time. Study parameters included type of mastectomy, type of reconstruction, timing of reconstruction, laterality, adjuvant and/or neoadjuvant radiotherapies received, and contra lateral breast procedures performed. Complications such as skin flap necrosis, infection, hematoma, seroma, delayed wound healing, failed expansion and expander/implant deflation, exposure, and/or loss were evaluated.

#### Results

Over the 10 year study period, 64 breast reconstructions were performed in 60 patients. Out of these 60 patients Skin Sparing Mastectomy was done in 37 (61.7%) patients,



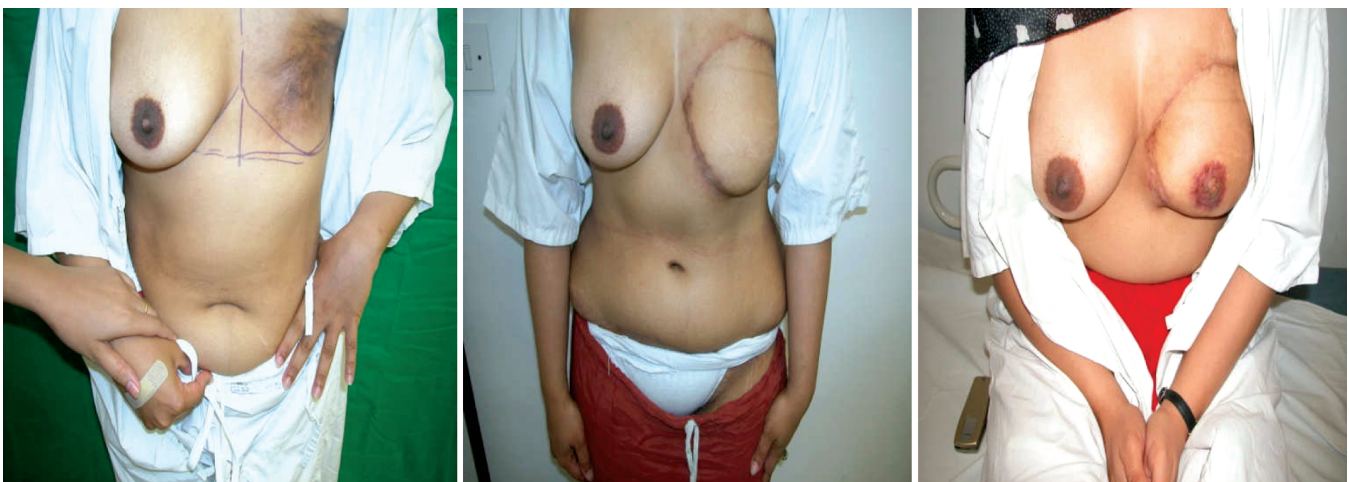
**Figure-1:** Pre and post operative pictures of patient who underwent immediate bilateral implant combined with LD flap reconstruction subsequent to bilateral skin sparing mastectomy.

Modified Radical Mastectomy in 17(28.3%) and Simple Mastectomy and Bilateral Skin Sparing Mastectomy in 3(5%) patients each. Median patient age was 43 years (range, 20 to 65 years). Of the 60 patients with breast reconstruction, 51(85%) had immediate reconstruction and 9 (15%) had delayed reconstruction.

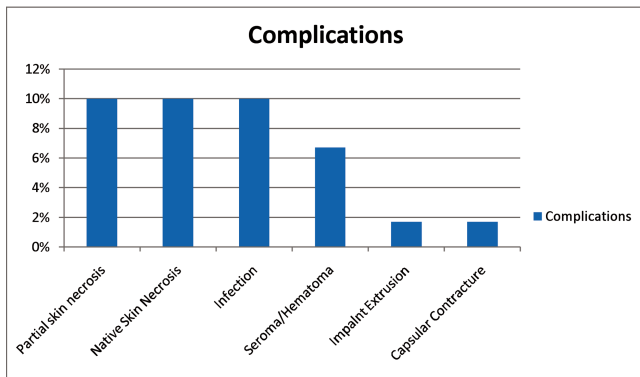
Autogenous reconstructions were performed in 31 (51.7%) patients and 29 (48.33%) patients had implant based reconstructions. All autogenous reconstructions were performed using a pedicled Transverse Rectus Abdominis Myocutaneous (TRAM) flap. In patients who had implant based reconstruction, the majority 23 (38.33%) were combination of an implant and Latissimus Dorsi (LD) flap while two patients had pure implant based reconstruction. In these two patients the expander implant was placed under the pectoralis major muscle. Combination of expander/implant and LD flap reconstruction was carried out in 9 (15%) patients while 14 (23.3%) patients had a combination of fixed volume implant and LD flap reconstruction. All the fixed volume implants were textured silicone gel implants while all the expander implant were double lumen textured silicone gel implant with the second lumen for saline injection and expansion.

Bilateral reconstruction was performed in 4 (6.66%) patients. Of the bilateral reconstructions 3 (5%) patients were reconstructed with bilateral fixed volume implant combined with LD and one with expander implant combined with LD (Figure-1). Of the patients who underwent a unilateral reconstruction, a contralateral symmetrization procedure was performed in 6(10 %) cases. Of these patients 4 were patients in whom unilateral implant based reconstruction had been performed and 2 had a pedicled TRAM reconstruction. All the contra lateral procedures done for symmetry were reduction mammoplasty.

Only 2 (3.33%) of the total 60 patients went onto undergo



**Figure-2:** Patient with defect after left sided mastectomy and radiation. Staged reconstruction using TRAM and second stage refashioning of breast mound and creation of nipple areola complex.



**Figure-3:** Complications.

second stage nipple areola complex (NAC) reconstruction (Figure-2).

Chest wall irradiation was given in 16 (26.7%) patients. Of these 8 (13.33%) patients had post reconstruction radiation while 8 (13.33%) patients had radiation prior to reconstruction. Of the patients who received radiations 10 (16.66%) patients underwent autogenous reconstruction and 6 (10%) patients underwent implant based reconstruction.

The total number of obese patients was 8 (13.3%), 28(46.7%) were overweight and 24 (40%) had a normal BMI. The perioperative complications were partial flap necrosis in 6 (10%) patients, native skin necrosis in 6(10%) patients, infection in 6 (10%), hematoma/seroma in 4(6.7%) and 1 (1.7%) patient each had Implant extrusion and capsular contracture.

## Discussion

While there is a growing body of work on breast reconstruction internationally.<sup>7-10</sup> We found no such study in the national literature to date.

In our institution, a leading tertiary care hospital, our breast reconstruction rate stands at about 4%. While abysmally low, anecdotal accounts would suggest that this is probably higher than any other centre in Pakistan.

We postulate that the reasons for low numbers nationally are primarily down to a lack of awareness by breast surgeons, referring general practitioners and the public at large. Additional factors are the relatively small number of plastic surgeons available and the extra cost — both monetary and physical — that a concomitant reconstruction entails.

In our series we have used both flap and implant based reconstructions. While all decisions are individualised, keeping in mind the patient's choice as well as the

surgeon's preference given the body habitus and comorbidities, there has been a recent increasing trend in implant based reconstructions. Perhaps the biggest factor in this has been the risk of partial flap necrosis seen in our pedicle TRAM patients. To lessen the risk of this we could have graduated to more sophisticated techniques like the free TRAM or free DIEP flaps but this appeared daunting in an immediate reconstruction setting in our institution where we have to factor in the additional hours that a skin sparing mastectomy takes. We have instead chosen to modify our approach to potential pedicle TRAM patients by limiting the size of the flap to zones 1 and 2 or then doing a simultaneous reduction on the opposite site.

## Conclusion

Our numbers are low when compared internationally. However on a national level it would seem that the numbers currently exceed most institutions in the country. The overall results appear to be acceptable though the low numbers preclude definitive conclusions. This study should serve as a basis for discussion on this important subject and hopefully increase awareness.

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